Hydrologic and Climate Assessment
September 24, 2019

Aaron B. Wilson
STATE CLIMATE OFFICE OF OHIO (SCOO)
DEPARTMENT OF EXTENSION - CFAES
BYRD POLAR & CLIMATE RESEARCH CENTER
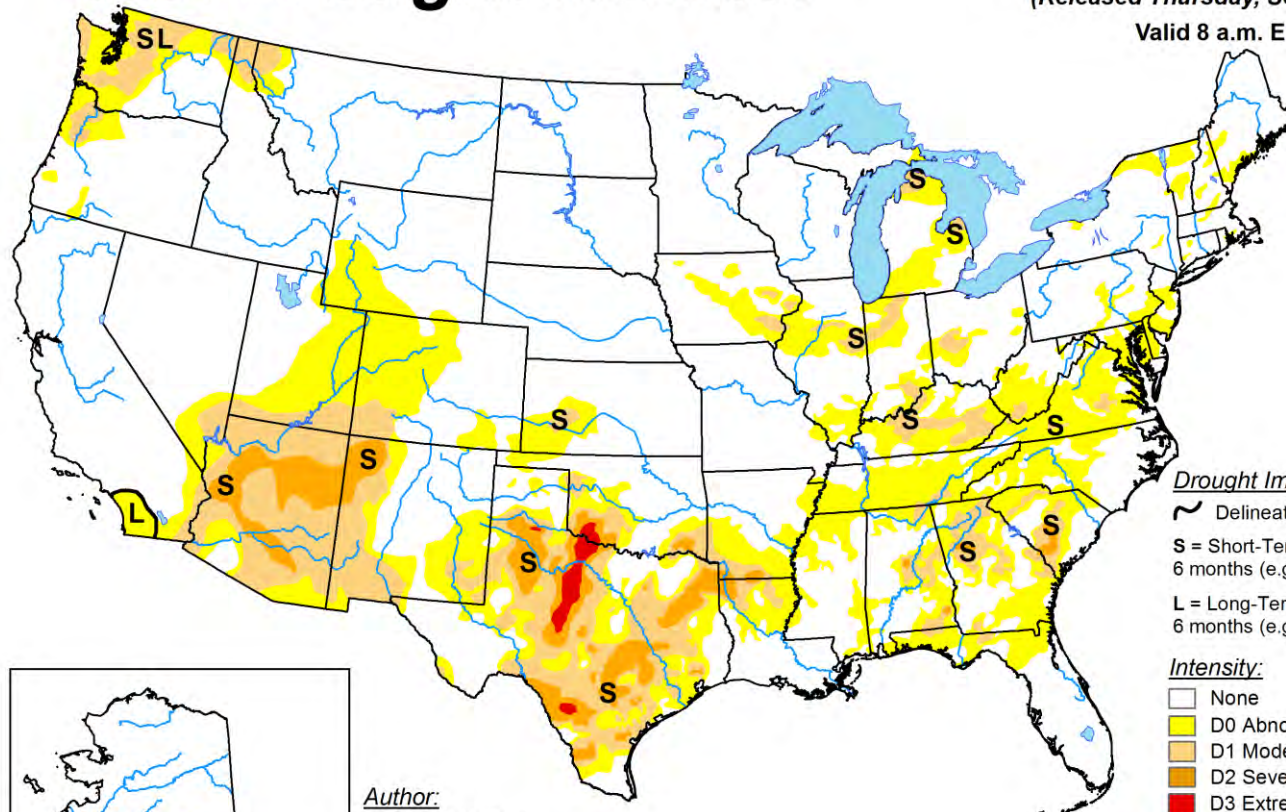**DEPARTMENT OF GEOGRAPHY**

THE OHIO STATE UNIVERSITY

U.S. Drought Monitor

September 17, 2019
(Released Thursday, Sep. 19, 2019)
Valid 8 a.m. EDT

Drought Impact Types:

∿ Delineates dominant impacts

S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)

L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)
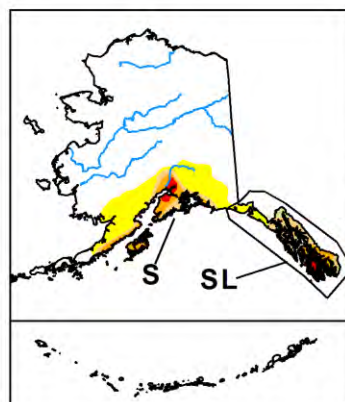
Intensity:

- None
- D0 Abnormally Dry
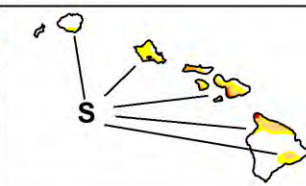- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Eric Luebehusen
U.S. Department of Agriculture

USDA · NDMC · DEPARTMENT OF COMMERCE · NOAA

droughtmonitor.unl.edu

THE OHIO STATE UNIVERSITY

STATE CLIMATE OFFICE OF OHIO (SCOO)
COLLEGE OF FOOD, AGRICULTURAL, AND ENVIRONMENTAL SCIENCES
DEPARTMENT OF EXTENSION
BYRD POLAR & CLIMATE RESEARCH CENTER
DEPARTMENT OF GEOGRAPHY

U.S. Drought Monitor
Ohio

September 17, 2019
(Released Thursday, Sep. 19, 2019)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	81.69	18.31	5.00	0.00	0.00	0.00
Last Week 09-10-2019	89.63	10.37	1.87	0.00	0.00	0.00
3 Months Ago 06-18-2019	100.00	0.00	0.00	0.00	0.00	0.00
Start of Calendar Year 01-01-2019	100.00	0.00	0.00	0.00	0.00	0.00
Start of Water Year 09-25-2018	100.00	0.00	0.00	0.00	0.00	0.00
One Year Ago 09-18-2018	100.00	0.00	0.00	0.00	0.00	0.00

Intensity:

None
D0 Abnormally Dry
D1 Moderate Drought
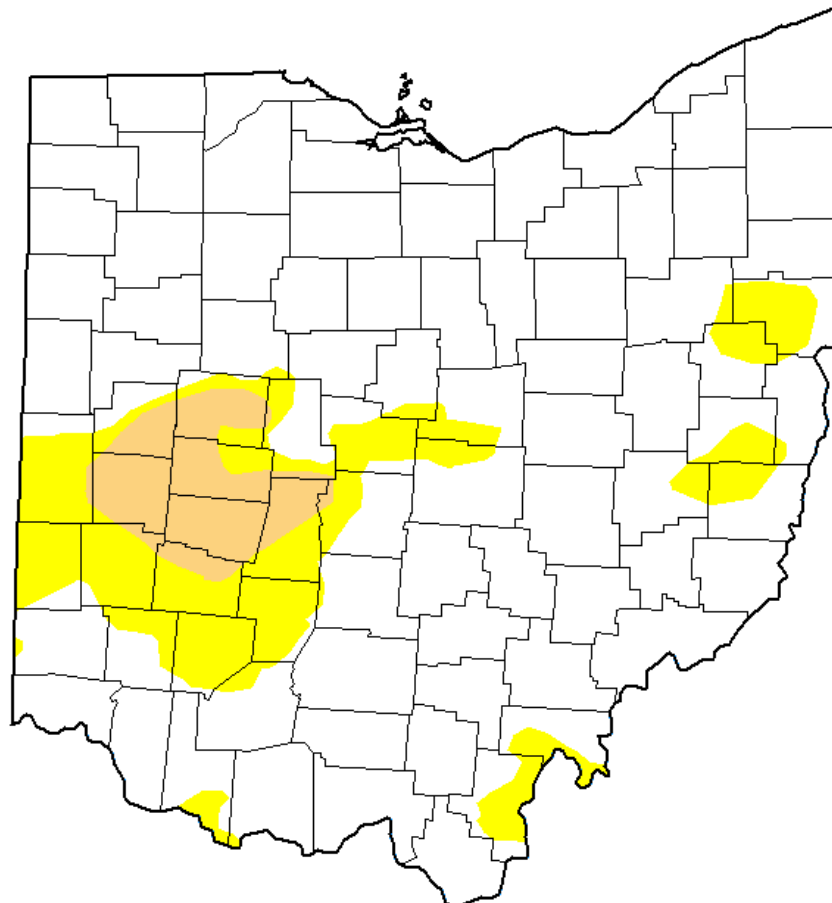D2 Severe Drought
D3 Extreme Drought
D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Eric Luebehusen
U.S. Department of Agriculture

USDA   NDMC   NOAA
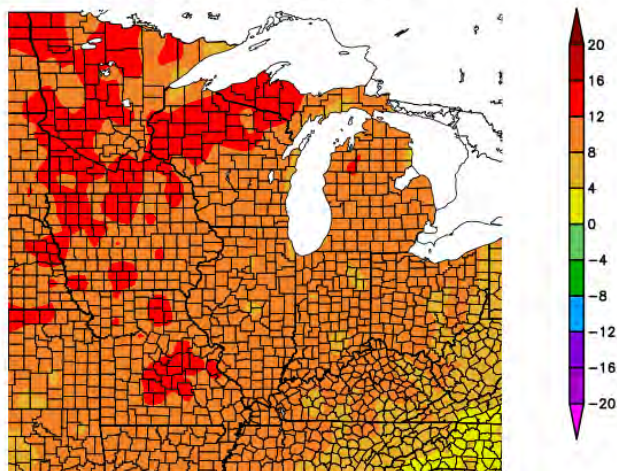
droughtmonitor.unl.edu

THE OHIO STATE UNIVERSITY

STATE CLIMATE OFFICE OF OHIO (SCOO)
COLLEGE OF FOOD, AGRICULTURAL, AND ENVIRONMENTAL SCIENCES
DEPARTMENT OF EXTENSION
BYRD POLAR & CLIMATE RESEARCH CENTER
DEPARTMENT OF GEOGRAPHY

Temperature Differences Compared to Average (1981-2010)

7-Day

Departure from Normal Temperature (F)
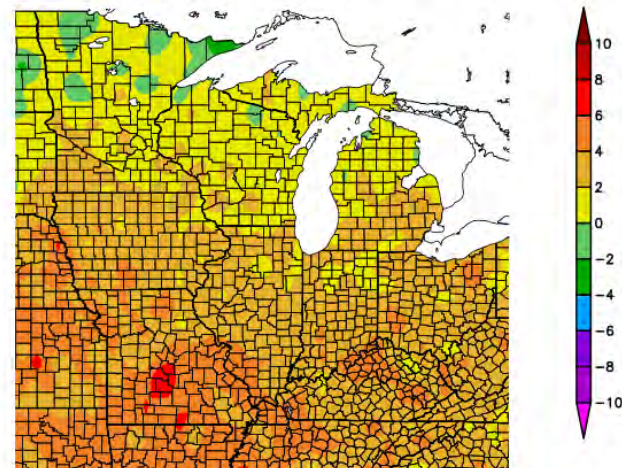9/17/2019 – 9/23/2019

Generated 9/24/2019 at HPRCC using provisional data.   NOAA Regional Climate Centers

30-Day

Departure from Normal Temperature (F)
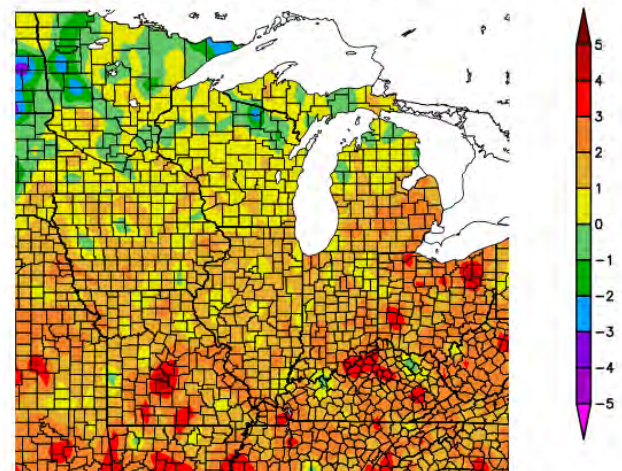8/25/2019 – 9/23/2019

Generated 9/24/2019 at HPRCC using provisional data.   NOAA Regional Climate Centers
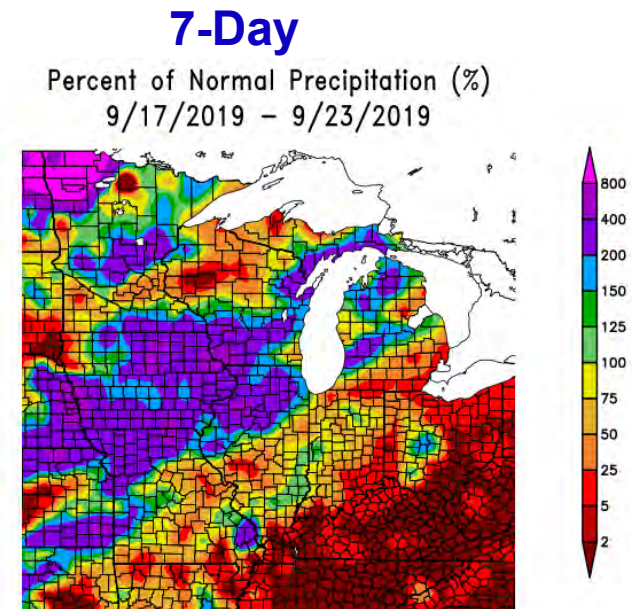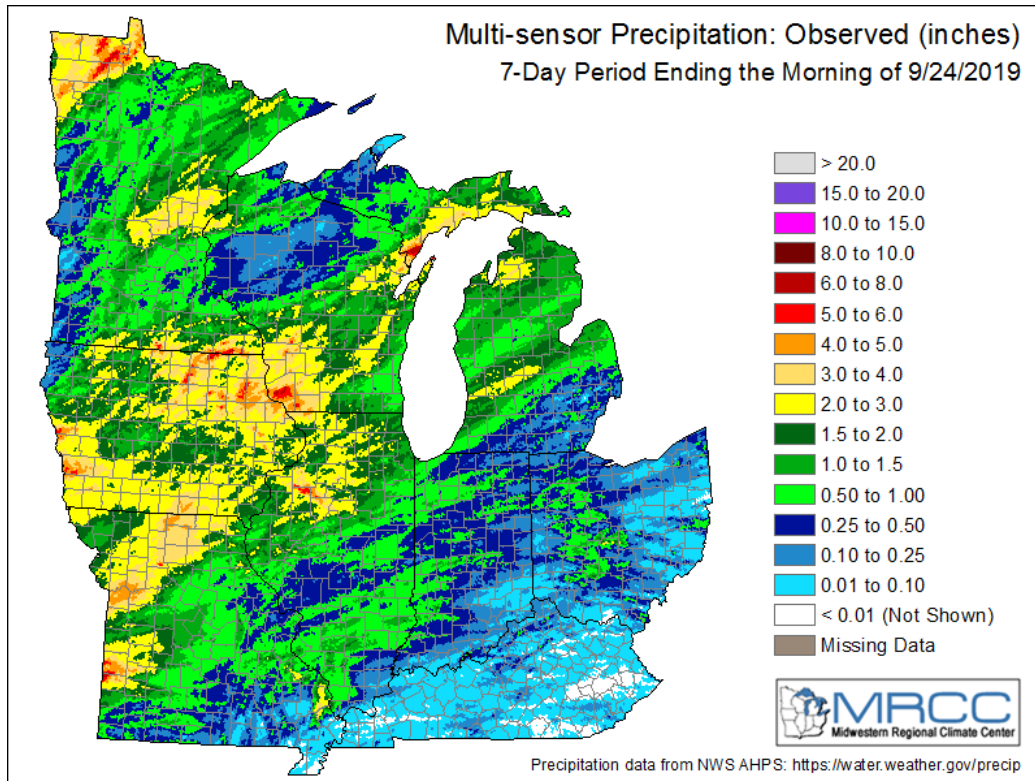
60-Day

Departure from Normal Temperature (F)
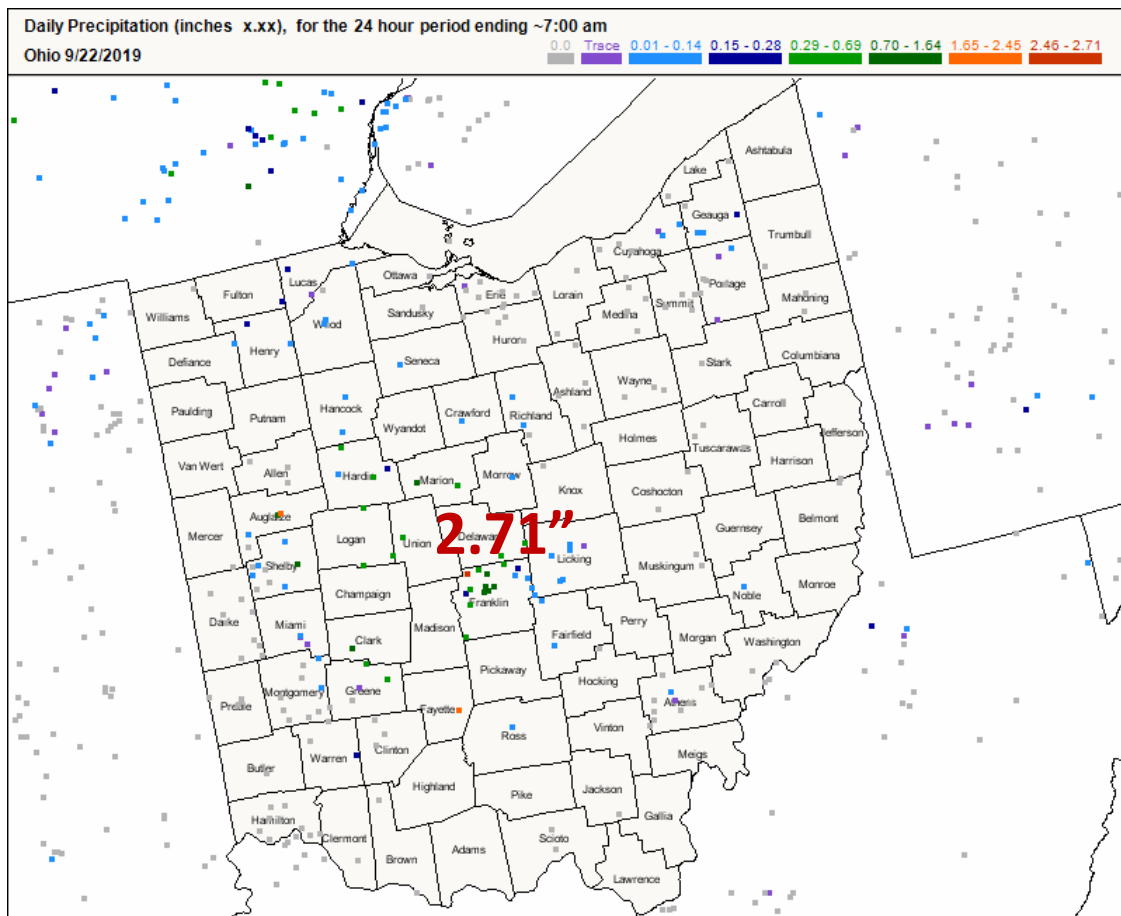7/26/2019 – 9/23/2019

THE OHIO STATE UNIVERSITY

STATE CLIMATE OFFICE OF OHIO (SCOO)
COLLEGE OF FOOD, AGRICULTURAL, AND ENVIRONMENTAL SCIENCES
DEPARTMENT OF EXTENSION
BYRD POLAR & CLIMATE RESEARCH CENTER
DEPARTMENT OF GEOGRAPHY

This Week's Precipitation

Multi-sensor Precipitation: Observed (inches)
7-Day Period Ending the Morning of 9/24/2019

> 20.0
15.0 to 20.0
10.0 to 15.0
8.0 to 10.0
6.0 to 8.0
5.0 to 6.0
4.0 to 5.0
3.0 to 4.0
2.0 to 3.0
1.5 to 2.0
1.0 to 1.5
0.50 to 1.00
0.25 to 0.50
0.10 to 0.25
0.01 to 0.10
< 0.01 (Not Shown)
Missing Data

Precipitation data from NWS AHPS: https://water.weather.gov/precip

7-Day
Percent of Normal Precipitation (%)
9/17/2019 – 9/23/2019

Generated 9/24/2019 at HPRCC using provisional data.   NOAA Regional Climate Centers

Drought.gov
U.S. Drought Portal

CoCoRaHS

Greatest Year to Date: Cheviot – 52.90"

Daily Precipitation (inches x.xx), for the 24 hour period ending ~7:00 am
Ohio 9/22/2019

0.0 Trace 0.01 - 0.14 0.15 - 0.28 0.29 - 0.69 0.70 - 1.64 1.65 - 2.45 2.46 - 2.71

2.71"

https://cocorahs.org/

Since July 1

| CoCoRaHS Name	Total Precip (inches)
Newton Falls 0.6 N	17.10
Pataskala 3.2 E	16.17
Canton 5.8 WNW	14.54
Fayette 4.3 ESE	14.34
Swanton 6.7 NNE	14.18
Pickerington 2.7 NNE	14.15
Reynoldsburg 1.1 ENE	14.06
Kirkersville 3.3 N	13.61
Madison 4.2 S	13.55
Loudonville 3.0 NW	13.40

THE OHIO STATE UNIVERSITY

Precipitation Differences Compared to Average (1981-2010)

30-Day

Percent of Normal Precipitation (%)
8/25/2019 – 9/23/2019

Generated 9/24/2019 at HPRCC using provisional data.
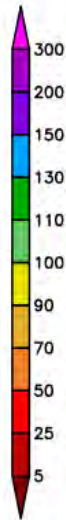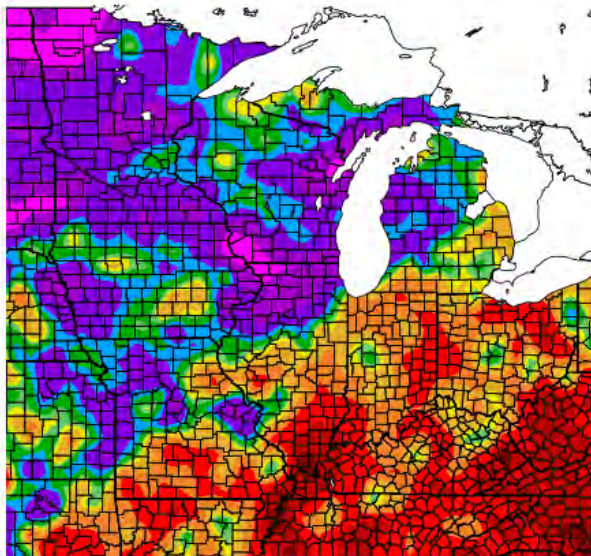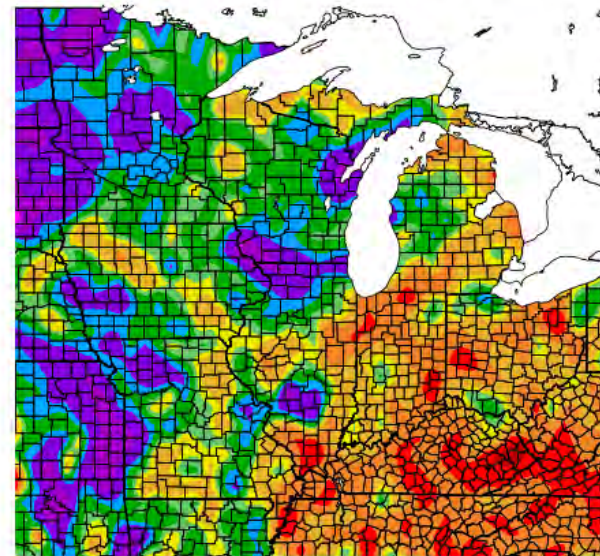
NOAA Regional Climate Centers

60-Day

Percent of Normal Precipitation (%)
7/26/2019 – 9/23/2019
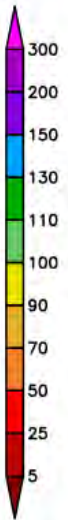
Generated 9/24/2019 at HPRCC using provisional data.

NOAA Regional Climate Centers
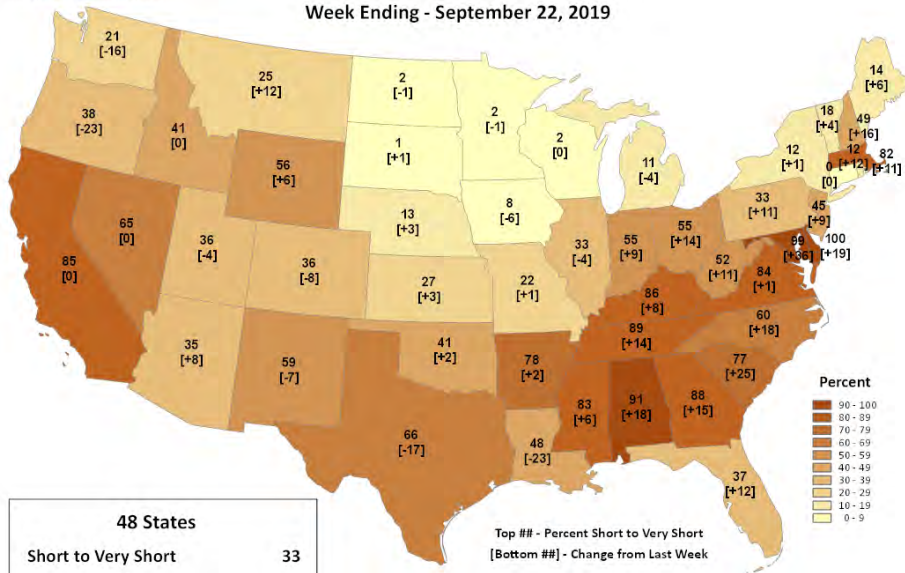
NATIONAL INTEGRATED DROUGHT INFORMATION SYSTEM

NIDIS Drought.gov
U.S. Drought Portal

THE OHIO STATE UNIVERSITY

Soil Moisture

Topsoil Moisture
Percent Short to Very Short
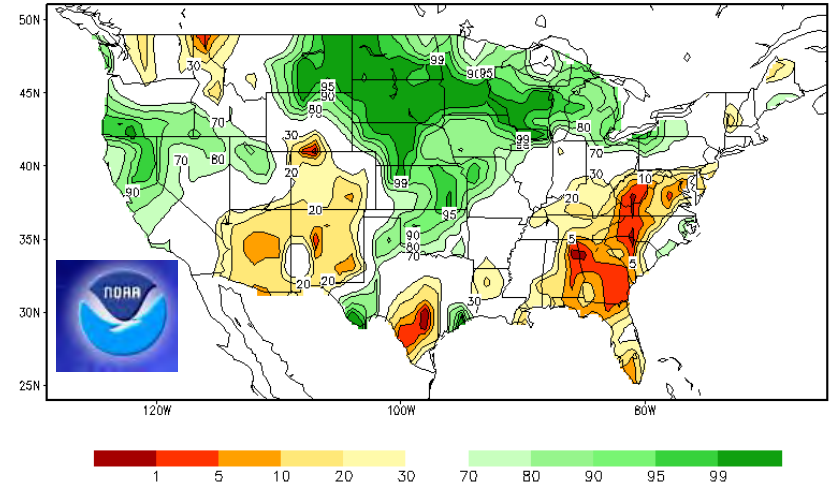#### Week Ending - September 22, 2019

USDA United States Department of Agriculture

This product was prepared by the USDA Office of the Chief Economist (OCE) World Agricultural Outlook Board (WAOB)
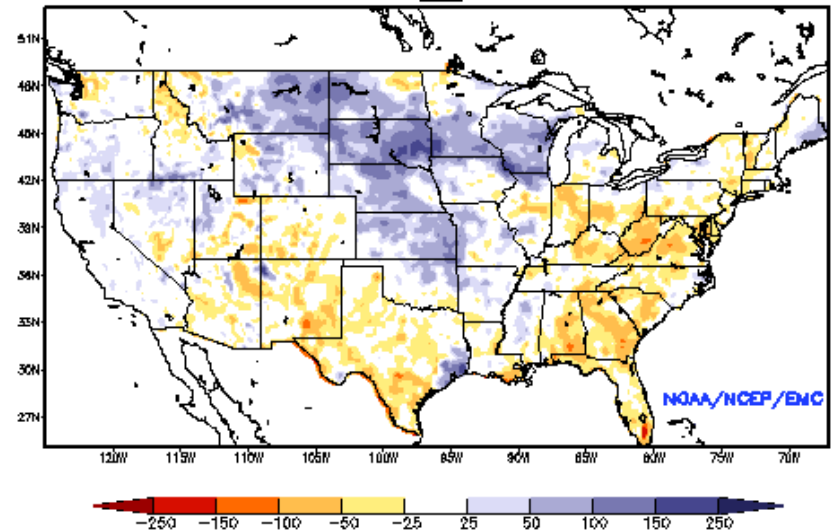
48 States	
Short to Very Short	33
Change from Last Week	0

Top ## - Percent Short to Very Short
[Bottom ##] - Change from Last Week

Data obtained from USDA National Agricultural Statistics Service weekly Crop Progress reports.

Percent
90 - 100
80 - 89
70 - 79
60 - 69
50 - 59
40 - 49
30 - 39
20 - 29
10 - 19
0 - 9

Calculated Soil Moisture Ranking Percentile
SEP 23, 2019

Ensemble-Mean – Current Total Column Soil Moisture Anomaly (mm)
NCEP NLDAS Products____ Valid: SEP 20, 2019

THE OHIO STATE UNIVERSITY

USGS Streamflow

7-DAY

28-DAY
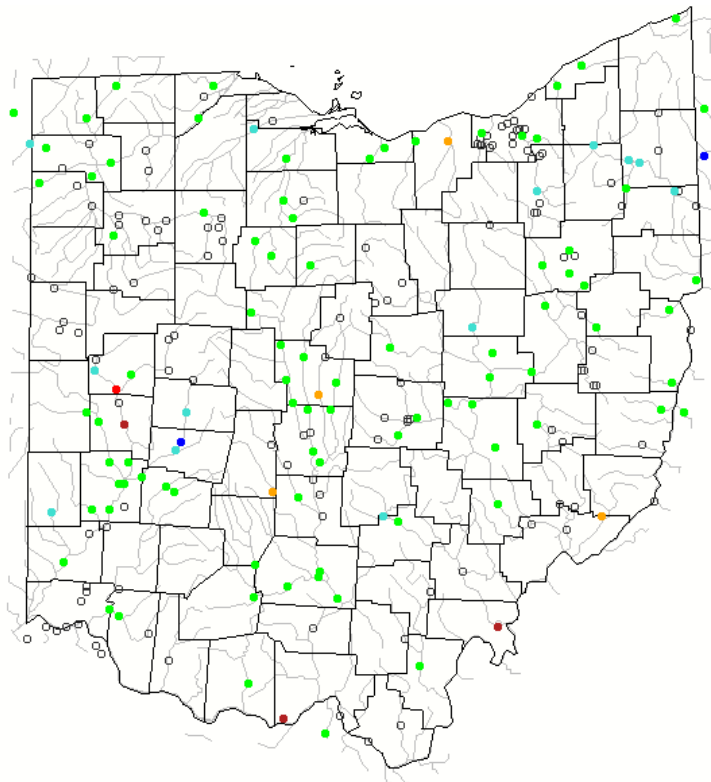
Explanation - Percentile classes

Low	<10	10-24	25-75	76-90	>90	High	Not-ranked
	Much below normal	Below normal	Normal	Above normal	Much above normal		

Average streamflow compared to historical streamflow for the day of the year
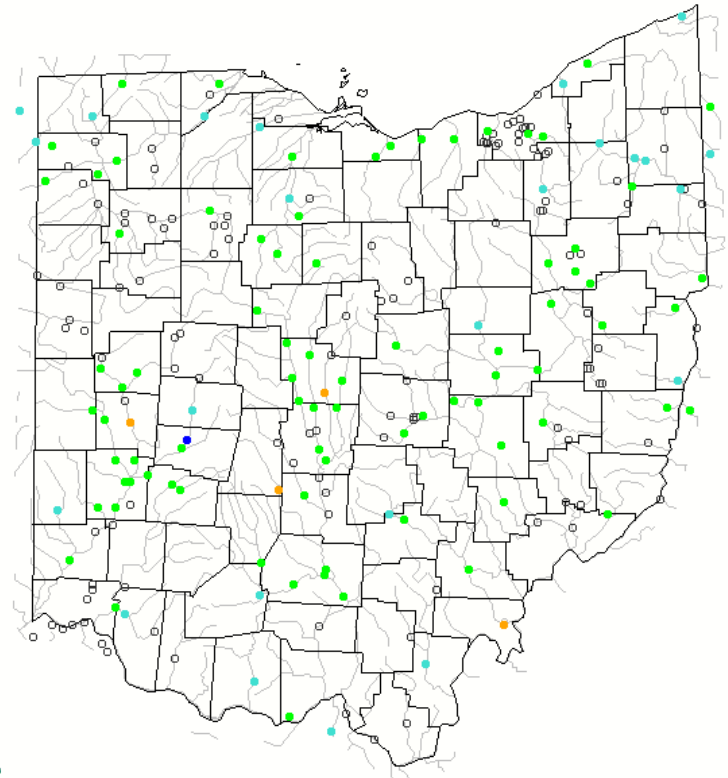
THE OHIO STATE UNIVERSITY

Evaporative Demand Drought Index

EDDI can offer early warning of agricultural drought, hydrologic drought, and fire-weather risk by providing near-real-time information on the emergence or persistence of anomalous evaporative demand in a region. A particular strength of EDDI is in capturing the precursor signals of water stress at weekly to monthly timescales, which makes EDDI a strong tool for preparedness for both flash droughts and ongoing droughts.

1-week EDDI categories for September 19, 2019

Drought categories | Wetness categories

ED4 ED3 ED2 ED1 ED0 | EW0 EW1 EW2 EW3 EW4
100% 98% 95% 90% 80% 70% | 30% 20% 10% 5% 2% 0%

(EDDI-percentile category breaks: 100% = driest; 0% = wettest)

Generated by NOAA/ESRL/Physical Sciences Division

Image provided by the NOAA/ESRL Physical Sciences Division, Boulder, Colorado, from their web site at: https://www.esrl.noaa.gov/psd/.

THE OHIO STATE UNIVERSITY

Weather for the Week Ahead
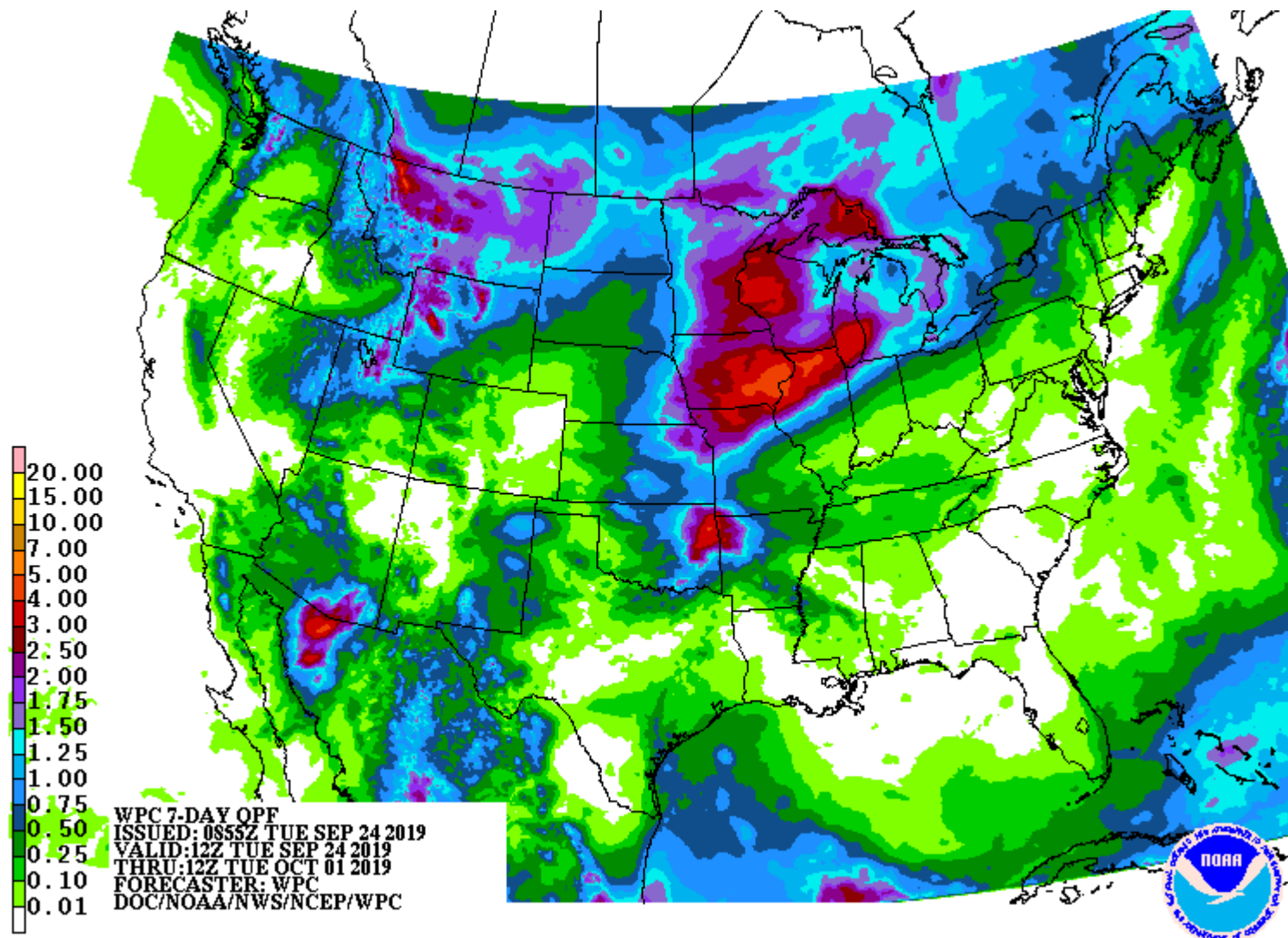
WPC 7-DAY QPF
ISSUED: 0855Z TUE SEP 24 2019
VALID: 12Z TUE SEP 24 2019
THRU: 12Z TUE OCT 01 2019
FORECASTER: WPC
DOC/NOAA/NWS/NCEP/WPC

20.00
15.00
10.00
7.00
5.00
4.00
3.00
2.50
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.10
0.01

THE OHIO STATE UNIVERSITY

STATE CLIMATE OFFICE OF OHIO (SCOO)
COLLEGE OF FOOD, AGRICULTURAL, AND ENVIRONMENTAL SCIENCES
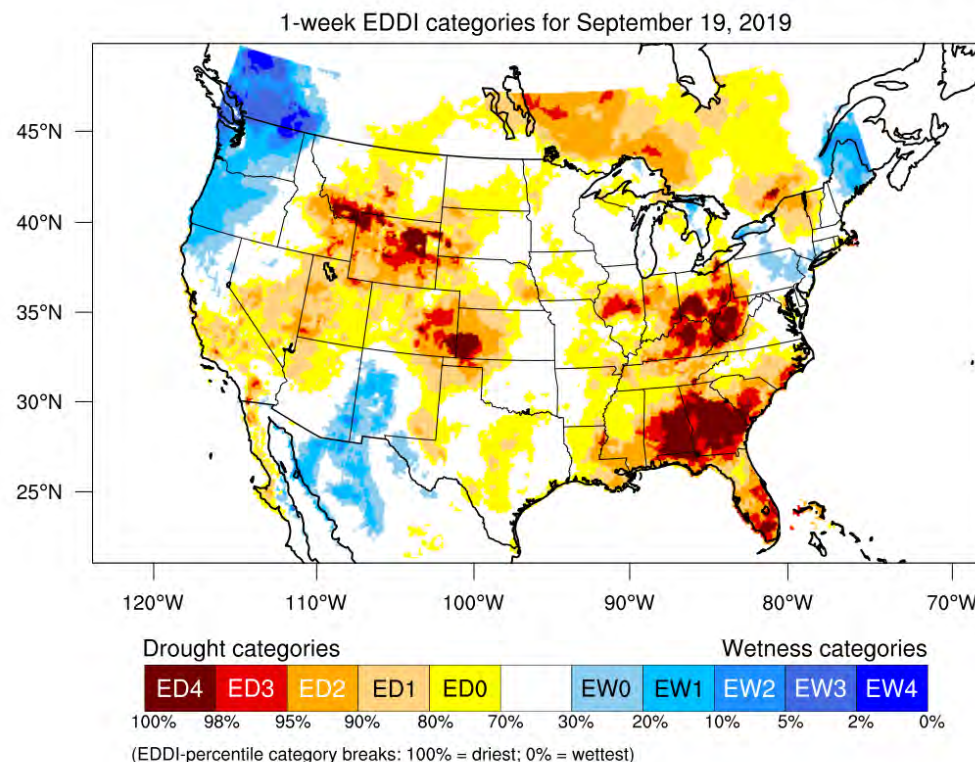DEPARTMENT OF EXTENSION
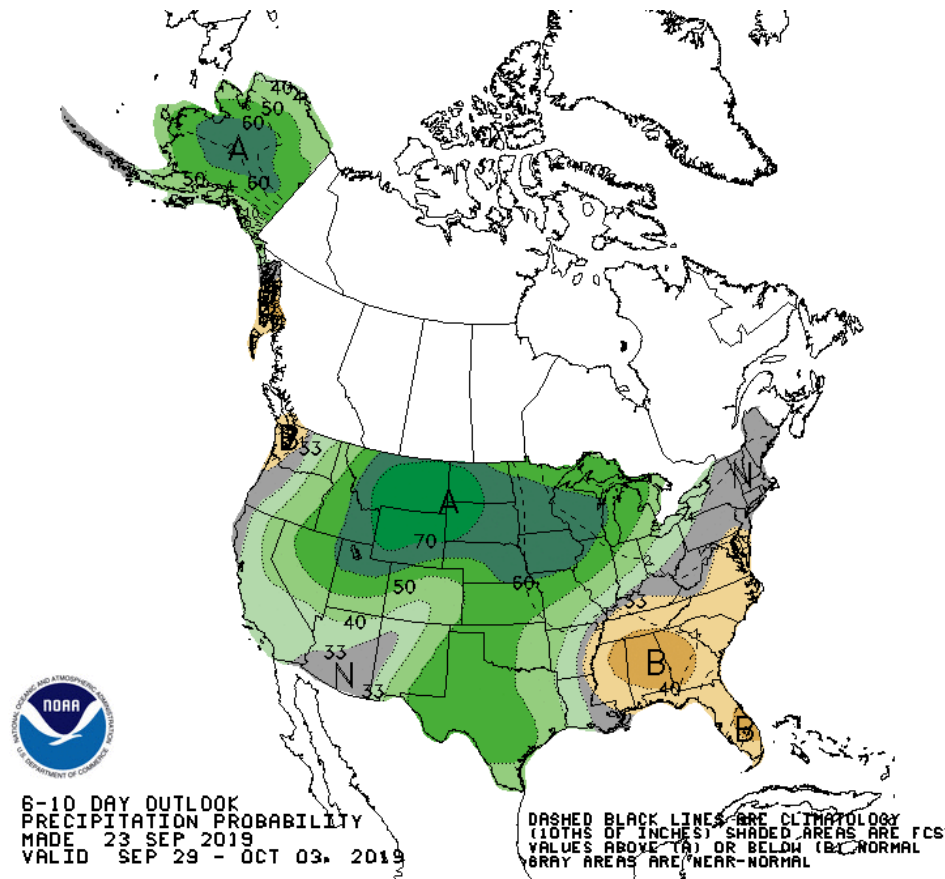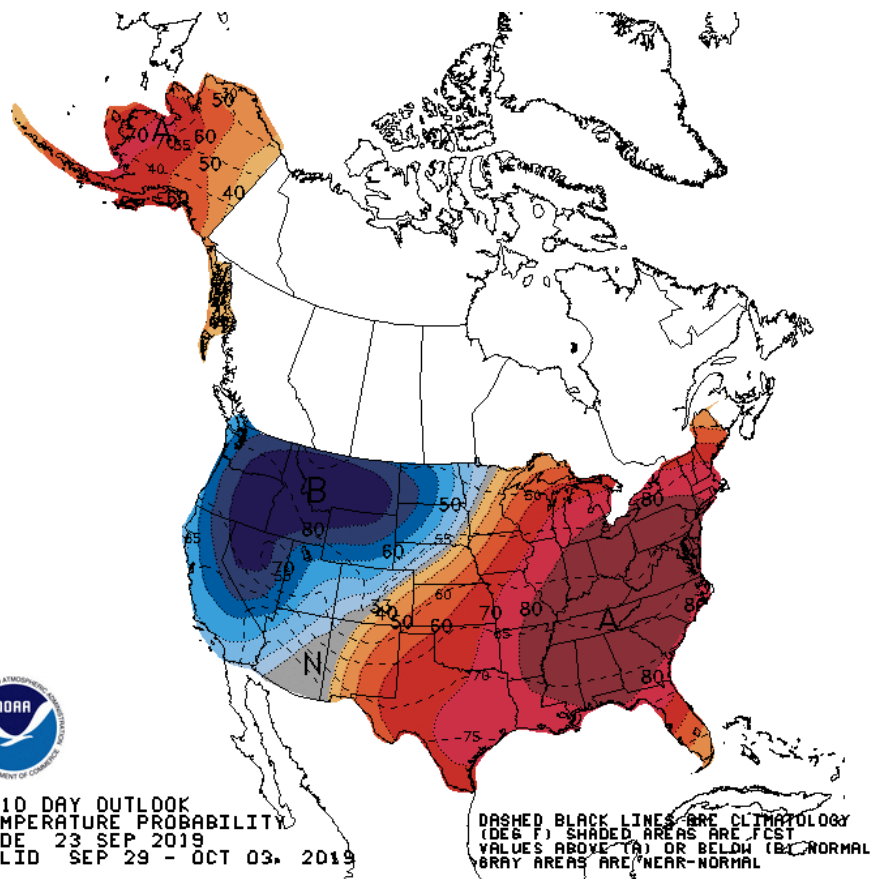BYRD POLAR & CLIMATE RESEARCH CENTER
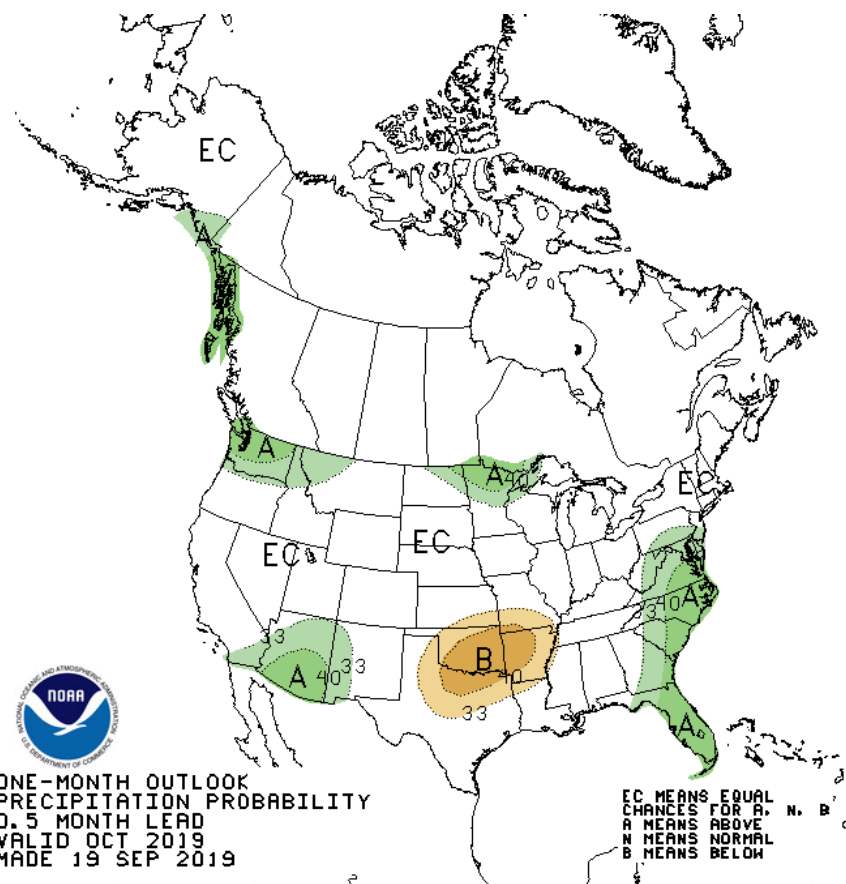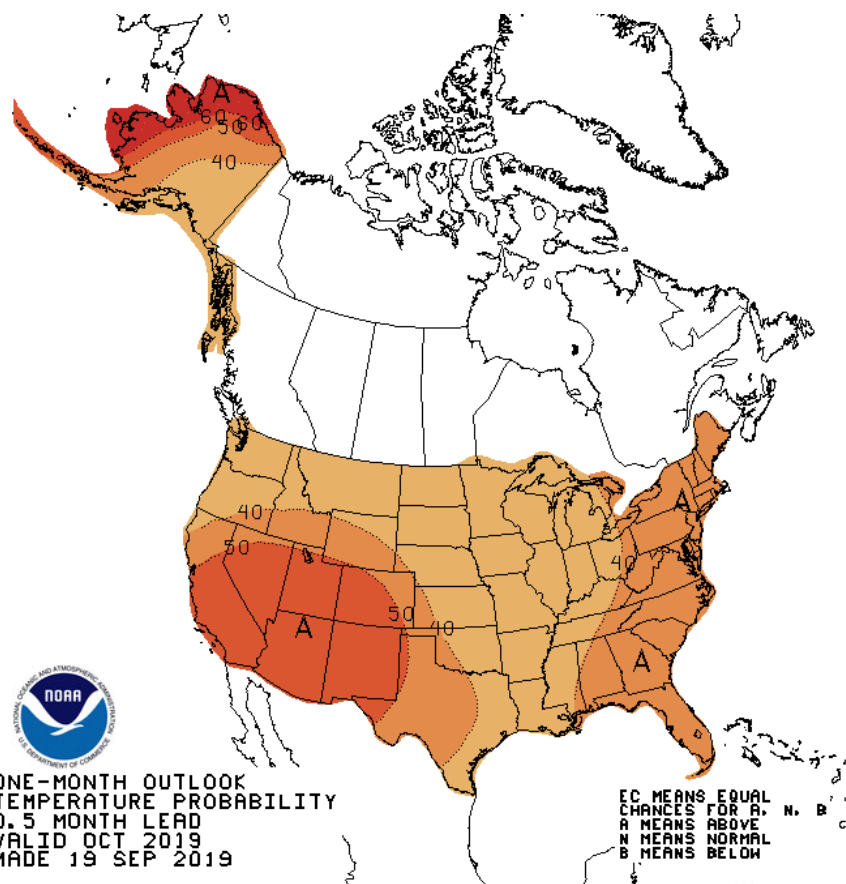DEPARTMENT OF GEOGRAPHY

6-10 Day Outlook

Highs: 70-74°F; **Lows:** 49-53°F; **Precip:** 0.65-0.80" (per week)

October 2019 Outlook

ONE-MONTH OUTLOOK
TEMPERATURE PROBABILITY
0.5 MONTH LEAD
VALID OCT 2019
MADE 19 SEP 2019

EC MEANS EQUAL
CHANCES FOR A, N, B
A MEANS ABOVE
N MEANS NORMAL
B MEANS BELOW

ONE-MONTH OUTLOOK
PRECIPITATION PROBABILITY
0.5 MONTH LEAD
VALID OCT 2019
MADE 19 SEP 2019

EC MEANS EQUAL
CHANCES FOR A, N, B
A MEANS ABOVE
N MEANS NORMAL
B MEANS BELOW

THE OHIO STATE UNIVERSITY

STATE CLIMATE OFFICE OF OHIO (SCOO)
COLLEGE OF FOOD, AGRICULTURAL, AND ENVIRONMENTAL SCIENCES
DEPARTMENT OF EXTENSION
BYRD POLAR & CLIMATE RESEARCH CENTER
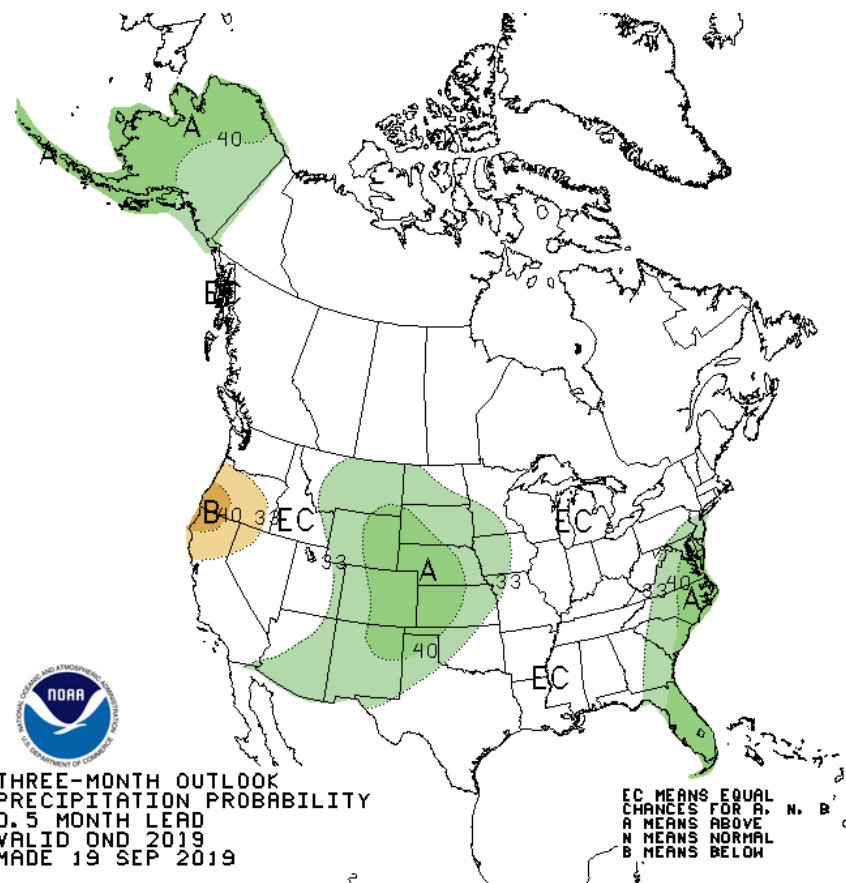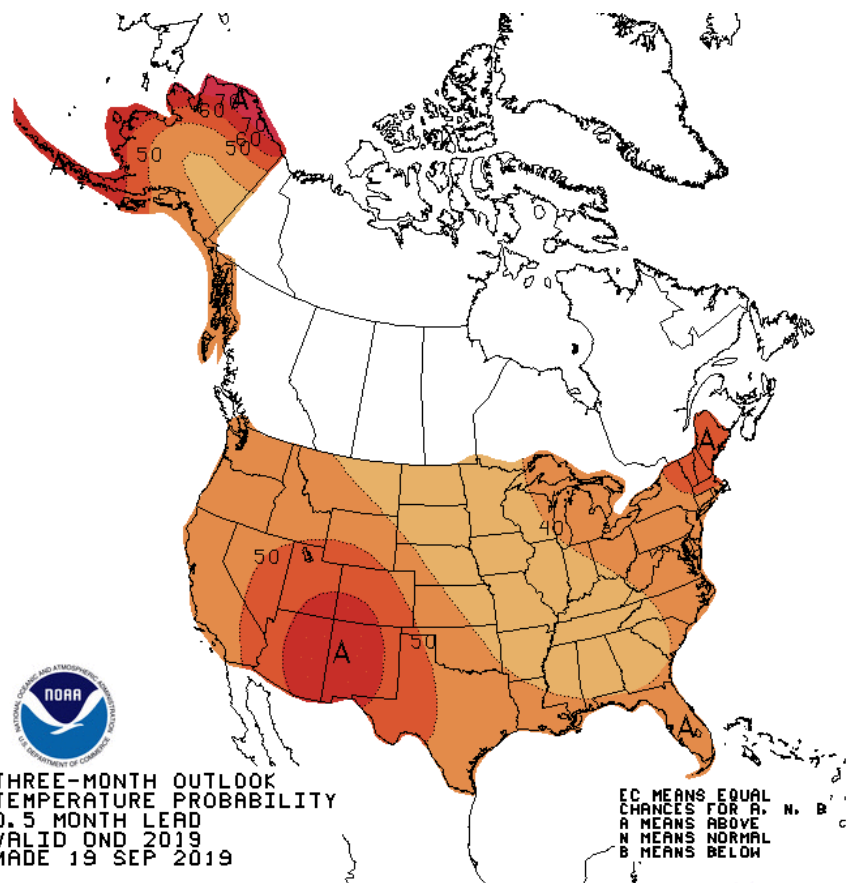DEPARTMENT OF GEOGRAPHY

October-December 2019 Outlook

THREE-MONTH OUTLOOK
TEMPERATURE PROBABILITY
0.5 MONTH LEAD
VALID OND 2019
MADE 19 SEP 2019

EC MEANS EQUAL
CHANCES FOR A, N, B
A MEANS ABOVE
N MEANS NORMAL
B MEANS BELOW

THREE-MONTH OUTLOOK
PRECIPITATION PROBABILITY
0.5 MONTH LEAD
VALID OND 2019
MADE 19 SEP 2019

EC MEANS EQUAL
CHANCES FOR A, N, B
A MEANS ABOVE
N MEANS NORMAL
B MEANS BELOW

Probability of Below   Probability of Near-Normal   Probability of Above

THE OHIO STATE UNIVERSITY

Ag Highlights

- 6.6 days suitable for fieldwork last week through September 22

- Dry conditions impacting soils, some crop stress, but allowing hay making to finish up

- Winter Wheat planting a bit ahead of schedule

NASS: Cheryl Turner –
https://www.nass.usda.gov/Statistics_by_State/Ohio/Publications/Crop_Progress_&_Condition/2019/cw1719oh.pdf

Corn Dented

Soybean Condition

Corn Condition

THE OHIO STATE UNIVERSITY
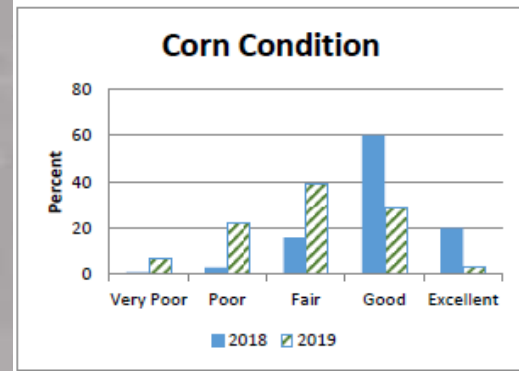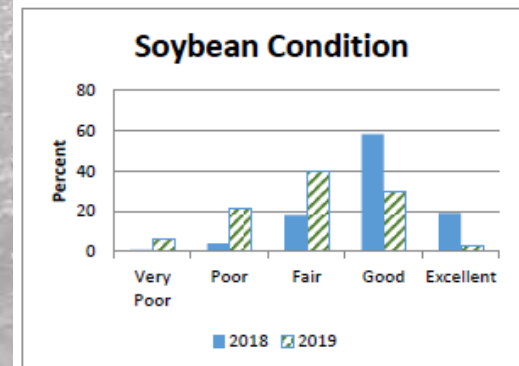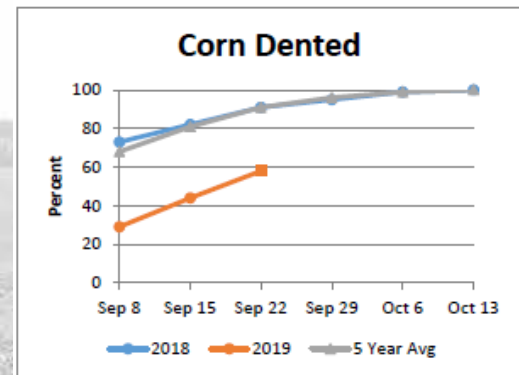
Summary of Conditions

Drought Monitor: Expanding dry and low level drought conditions, especially in the west

Climate Recap: Very dry across much of the state, well above normal temperatures

The week ahead: A short-lived opportunity for rainfall this week with temperatures become much above normal again by the weekend

THE OHIO STATE UNIVERSITY

Partners and Additional Information

- SCOO's Website: https://climate.osu.edu

- NOAA's National Climatic Data Center: www.ncdc.noaa.gov
  - Monthly climate reports (U.S. & Global): www.ncdc.noaa.gov/sotc/

- NOAA's Climate Prediction Center: www.cpc.ncep.noaa.gov

- USDA Midwest Climate Hub: https://www.climatehubs.oce.usda.gov/hubs/midwest

- Climate Portal: www.climate.gov

- U.S. Drought Portal: www.drought.gov

- National Drought Mitigation Center: https://drought.unl.edu/

- Midwest Regional Climate Center: https://mrcc.isws.illinois.edu

- Community Collaborative Rain Snow Hail Network (CoCoRaHS): https://cocorahs.org

- Intro Song: "To Weather A Storm" by Dan Lebowitz